

## ABSTRACT

Diode devices are disclosed in which the separation of the electrodes is set and controlled using piezo-electric, electrostrictive or magnetostrictive actuators. This avoids problems associated with electrode spacing changing or distorting as a result of heat stress. In addition it allows the operation of these devices at electrode separations which permit quantum electron tunneling between them. Pairs of electrodes whose surfaces replicate each other are also disclosed. These may be used in constructing devices with very close electrode spacings.